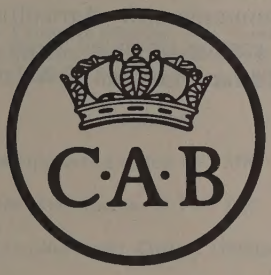
# FIELD CROP ABSTRACTS

**Volume 30**




*Prepared by*

**Commonwealth Bureau of Pastures and Field Crops, Hurley**

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The Commonwealth Bureau of Pastures and Field Crops is located at the Grassland Research Institute, Hurley, and is one of a group of 10 Bureaux and 4 Institutes which together form the Commonwealth Agricultural Bureaux, an organization financed and administered jointly by the various Commonwealth Governments and Dependent Territories. The Commonwealth Agricultural Bureaux produce 24 abstract journals covering the major branches of agricultural and related sciences. The journals and their subscription rates are listed on the back cover.

The Bureau prepares two monthly journals. *Herbage Abstracts* and *Field Crop Abstracts*, for publication by the Commonwealth Agricultural Bureaux, Farnham Royal, Bucks. The journals contain abstracts of the research findings reported in the world scientific literature on annual field crops, pastures, herbage plants and rangelands and provide both a comprehensive guide to current scientific and technological developments in their subjects and a key to the literature published in the past. In addition to abstracts, the Bureau also issues reviews and monographs on selected subjects.

*Scope of Herbage Abstracts:* The subjects covered include grasslands (natural and sown), pasture plants and fodder crops. The aspects dealt with are shown in the Contents list. Land use, farming systems, agricultural meteorology and the control of weeds, pests and diseases are dealt with only in so far as they concern the crop coverage.

The Bureau is prepared, on request, to undertake literature searches and to compile bibliographies on subjects within its scope. A list of bibliographies already compiled is published in this journal.

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## NOTES TO READERS

The address given at the end of abstract citations is that of the first author at the time of writing and is normally where the work was carried out.

Transliteration of Cyrillic script is based on the International Standard ISO/R9 1968 (E).

The titles of periodicals and reports conform where possible to those given in the *World List of Scientific Periodicals* (4th Edn; London: Butterworth) and are listed in *Field Crop Abstracts* Vol. 30, No. 1, on pp. 1-11, they can also be obtained as a separate from the Bureau of Pastures and Field Crops, Hurley, Maidenhead SL6 5LR, price £1.00.

## LANGUAGE SYMBOLS

The language symbols used are listed below. An initial capital letter denotes the main language of a paper, a small letter the language of the summary(ies).

| | | | | | |
|---|---|---|---|---|---|
| Af | Afrikaans | Fi | Finnish | Nl | Dutch, Flemish |
| Al | Albanian | Fr | French | No | Norwegian |
| Ar | Arabic | Gr | Greek | Pe | Persian |
| Be | Belorussian | He | Hebrew | Pl | Polish |
| Bg | Bulgarian | Hu | Hungarian | Pt | Portuguese |
| Ch | Chinese | Ia | Interlingua | Ro | Romanian |
| Cr | Croat | In | Indonesian | Ru | Russian |
| Cs | Czech | Is | Icelandic | Sh | Serbo-Croat |
| Da | Danish | It | Italian | Sk | Slovak |
| De | German | Ja | Japanese | Sn | Slovene |
| Ee | Estonian | Ko | Korean | Sr | Serbian |
| En | English | La | Latin | Sv | Swedish |
| Eo | Esperanto | Li | Lithuanian | Tr | Turkish |
| Es | Spanish | Lv | Latvian | Uk | Ukrainian |
| | | Ma | Macedonian | | |

## ABBREVIATIONS

The abbreviations used for the names of common units, mathematical operations, chemical elements, etc., are in accordance with British Standard 1991 : 1967. The following additional abbreviations are also used:

| | | | | | |
|---|---|---|---|---|---|
| a.e. | – | acid equivalent | *FCA* | – | *Field Crop Abstracts* |
| a.i. | – | active ingredient | *HbA* | – | *Herbage Abstracts* |
| alt. | – | altitude | LAI | – | leaf-area index |
| CGR | – | crop growth rate | LAR | – | leaf-area ratio |
| cv. | – | cultivar(s) | NAR | – | net assimilation rate |
| DM | – | dry matter | OM | – | organic matter |
| F ....s | – | from ..... summary | RGR | – | relative growth rate |
| f.y.m. | – | farmyard manure | | | |

## ERRATA

(lines are counted from the beginning of the bibliographic data in each item.)

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| *Page* | *Abstract* | *Line* | |
|---|---|---|---|
| 455 | 4655 | 15,18 | For 'rH' read '$_rH$' |
| 455 | 4655 | 17 | For 'rD' read '$_rD$' |
| 612 | 6388 | 7 | For 'glucose' read 'glucosinolate' |
| 612 | 6389 | 2,3 | Write 'Attivita della Sisforaggera per la diffusione delle varieta di colza' in Roman, not bold |
| 706 | 7413 | 2 | For **'in vivo'** read ***'in vivo'*** |
| 706 | 7413 | 3 | For **'in vitro'** read ***'in vitro'*** |

# FIELD CROP ABSTRACTS VOLUME 30, 1977

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ABSTRACTS

CEREALS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wheat | 13 | 93 | 147 | 205 | 247 | 309 | 377 | 423 | 497 | 565 | 629 | 697 |
| Oats | 21 | 99 | 154 | 210 | 255 | 315 | 380 | 432 | 503 | 574 | 638 | 705 |
| Rye | 22 | 101 | 154 | 211 | 256 | 316 | 381 | 434 | 504 | 576 | 639 | 707 |
| Triticale | 23 | 101 | 155 | 212 | 257 | 317 | 382 | 435 | 504 | 577 | 640 | 707 |
| Barley | 23 | 101 | 155 | 212 | 257 | 317 | 382 | 435 | 504 | 577 | 640 | 707 |
| Wild-rice | 27 | 105 | – | – | – | – | 383 | – | – | 579 | – | 710 |
| Maize | 27 | 105 | 157 | 213 | 260 | 319 | 383 | 438 | 508 | 580 | 643 | 710 |
| Sweet corn | 32 | 109 | 162 | 216 | – | 325 | 387 | 444 | 515 | 585 | – | 716 |
| Rice | 32 | 109 | 162 | 217 | 265 | 325 | 387 | 445 | 515 | 585 | 647 | 716 |
| Sorghum | 35 | 112 | 166 | 219 | 269 | 330 | 389 | 448 | 518 | 587 | 651 | 725 |
| *Pennisetum typhoides* | 36 | 112 | 167 | 220 | 269 | 331 | 390 | – | 518 | 587 | – | 726 |
| *Panicum miliaceum* | 36 | – | – | – | 270 | 332 | 390 | 450 | – | – | 653 | – |
| *Panicum miliare* | – | – | – | – | – | 332 | – | – | – | – | – | 726 |
| *Eleusine coracana* | – | – | 167 | 220 | 270 | 332 | 390 | – | – | – | – | – |
| Minor cereals | – | 112 | – | – | – | 332 | – | – | – | – | 653 | 726 |
| Cereals, general | 36 | 112 | 168 | 220 | 270 | 332 | 390 | 450 | 519 | 588 | 653 | 726 |

LEGUMES

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soyabeans | 38 | 113 | 168 | 221 | 271 | 333 | 391 | 451 | 520 | 589 | 654 | 727 |
| Groundnuts | 39 | 115 | 170 | 223 | 274 | 337 | 394 | 455 | 522 | 591 | 656 | 731 |
| Peas | 40 | 117 | 172 | 223 | 275 | 339 | 394 | 456 | 522 | 592 | 658 | 732 |
| *Vicia* spp. | 42 | 119 | 173 | 224 | 276 | 341 | 396 | 459 | 526 | 594 | 662 | 735 |
| *Phaseolus* spp. | 43 | 119 | 176 | 225 | 277 | 342 | 397 | 463 | – | 595 | 663 | 735 |
| *Vigna* spp. | 44 | 121 | – | 225 | 280 | 344 | 399 | 463 | – | 598 | 665 | 738 |
| *Trifolium* spp. | – | – | – | – | – | – | – | – | – | – | – | – |
| *Voandzeia subterranea* | – | – | – | – | – | – | – | – | – | – | 665 | – |
| *Cajanus cajan* | 44 | 121 | 177 | 226 | 282 | 345 | 400 | 464 | 530 | 599 | 665 | 738 |
| *Cicer arietinum* | 44 | 121 | 177 | 226 | 282 | 345 | 400 | 464 | 530 | 599 | 665 | 738 |
| *Lens esculenta* | 44 | – | 178 | – | 282 | 346 | 400 | 465 | 530 | – | – | 738 |
| *Lupinus* spp. | 45 | 122 | 178 | 226 | 282 | 346 | 400 | 465 | 531 | 599 | 665 | 739 |
| Minor legumes | – | 122 | – | 227 | 282 | 346 | 400 | – | – | – | 666 | 739 |
| Legumes, general | 45 | 122 | 179 | 227 | 283 | 347 | 401 | 466 | 531 | 600 | 666 | 739 |

ROOT CROPS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sugar beet | 46 | 122 | 180 | 227 | 283 | 347 | 402 | 466 | 531 | 600 | 668 | 740 |
| Fodder beet | 48 | 125 | 182 | 229 | 286 | 350 | – | 469 | – | 602 | 672 | 742 |
| Turnips and Swedes | 48 | 125 | 182 | 229 | 286 | 350 | 403 | 469 | – | 602 | 672 | – |
| Potatoes | 48 | 125 | 182 | 229 | 286 | 350 | 403 | 469 | 532 | 602 | 672 | 742 |
| Carrots | – | – | – | – | – | – | – | – | – | – | – | – |
| Sweet potatoes | 52 | – | 185 | 232 | 291 | 354 | 405 | 471 | 535 | 605 | 676 | 748 |
| Cassava | 52 | 128 | 186 | 232 | 291 | 354 | – | 472 | 535 | 605 | 676 | 749 |
| Yams | – | 129 | 186 | 232 | – | 355 | – | 472 | 536 | 605 | 677 | 749 |
| Cocoyams | – | – | 186 | – | – | 355 | – | 472 | – | – | – | – |
| Minor root crops | – | – | – | 232 | – | 355 | – | – | – | – | 678 | – |
| Root crops, general | 52 | 129 | – | 232 | – | – | – | – | 536 | – | 678 | – |

FIBRE CROPS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cotton | 53 | 129 | 186 | 233 | 292 | 355 | 405 | 472 | 536 | 605 | 678 | 750 |
| Fibre Flax | 56 | 132 | 189 | 234 | 294 | 358 | – | 475 | 538 | 610 | 682 | 752 |
| Hemp | 56 | 132 | – | – | 294 | 358 | – | 476 | 538 | 610 | 682 | 753 |
| Jute | 56 | 132 | 189 | 235 | 294 | 358 | 408 | 476 | – | – | – | 753 |
| Minor fibre crops | – | 132 | – | 235 | – | 358 | – | – | – | 610 | 682 | – |
| Fibre crops, general | – | – | – | – | – | 358 | – | – | – | – | 682 | – |

OILSEED CROPS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Castor | 56 | 132 | 189 | 235 | 294 | 359 | 408 | 476 | 538 | 610 | 682 | 753 |
| Sesame | 57 | 133 | 189 | 235 | – | 359 | 409 | 477 | 539 | 611 | 682 | – |
| Oilseed flax | 57 | 133 | 190 | 235 | 295 | 359 | – | 477 | – | 611 | 683 | 754 |
| Safflower | 57 | 133 | – | 235 | 295 | 359 | 409 | 477 | 539 | 611 | 683 | 754 |
| Sunflower | 57 | 133 | 190 | 235 | 295 | 360 | 409 | 477 | 539 | 611 | 683 | 754 |
| Rape | 59 | 134 | 191 | 236 | 296 | 360 | – | 478 | 540 | 611 | 684 | 760 |
| Minor oilseed crops | – | 134 | – | 237 | 297 | 361 | 409 | – | – | 612 | 685 | – |
| Oilseed crops, general | 60 | 134 | – | 237 | 297 | 362 | 410 | – | – | 612 | – | 760 |

MISCELLANEOUS CROPS

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tobacco | 61 | 135 | 191 | 238 | 297 | 362 | 410 | 479 | 541 | 612 | 685 | 760 |
| *Brassica oleracea* | – | – | – | – | 299 | – | – | – | – | – | – | – |
| Fodder radish | – | – | – | – | – | – | – | – | – | – | – | – |
| Buckwheat | 63 | 135 | – | 238 | – | – | – | 482 | 542 | 614 | 686 | 763 |
| Other crops | – | – | – | – | – | – | – | – | – | – | – | – |
| Miscellaneous crops, general | – | – | – | – | – | – | – | – | – | – | – | – |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| | | | | | | | | | | | | |
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| Physiology | 63 | 135 | 193 | 238 | 300 | 365 | 411 | 483 | 543 | 615 | 687 | 763 |
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